

**ABSTRACT:**

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The present invention relates to a device for measuring the X-ray emission produced by an object, or specimen, exposed to an electron beam. The device includes at least one subassembly or electron column, which is used to produce and control the electron beam, and a support for positioning the object measured. It also includes spectral analysis means for analyzing the X-rays emitted by the specimen to be analyzed and optical means for controlling the position of the specimen relative to the beam. The energy of the beam created and the intensity of the electron current obtained are used to meet the sensitivity, resolution and precision requirements demanded by semiconductor manufacturers. The invention applies especially to checking the fabrication of an integrated-circuit wafer.